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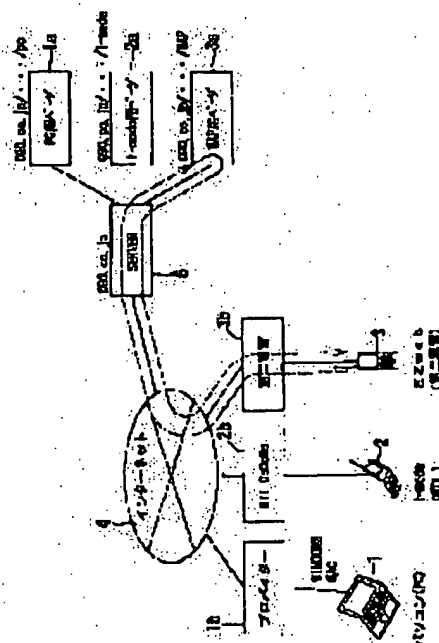|	
(21)Application number : 2000-174040	(71)Applicant : NAKANISHI TOSHIYUKI
(22)Date of filing : 09.06.2000	(72)Inventor : NAKANISHI TOSHIYUKI

(54) METHOD AND SYSTEM FOR PROVIDING ADAPTED CONTENTS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a method and a system capable of automatically displaying contents adaptible to a user terminal in the case of accessing a Web site by using a user terminal such as a portable telephone, a personal computer, etc., in which a terminal operation environment such as a connecting company, a hardware configuration and a software configuration is different.

SOLUTION: A connection guide server 5 having a function for examining the terminal operation environment of the user terminal 3, specifying a Web page 3a adapting to the terminal operation environment and allocating the connection destination of the terminal 3 to the URL of the Web page 3a is provided between the terminal 3 and a contents server to be the final connection destination.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the approach and system which can offer the contents suitable for the user terminal to the various user terminals connected to the Internet.
[0002]
[Description of the Prior Art] There is a remarkable thing in osmosis into the society of the Internet, equipment connectable with the Internet is also increasing in number by leaps and bounds, and it is in the limelight in current as a user terminal which a cellular phone can connect to the Internet in addition to a personal computer or a personal digital assistant. By the way, since the hardware configuration differs from loading software etc. mutually, these equipments must offer the contents which suit each equipment, when offering contents to these different-species equipment. For this reason, to each site, offering the contents which suited each user terminal because I install the server for the contents supply for each [these] equipments and have this server access from a user side is performed.
[0003] Although there are various things in the difference in the user terminal seen from the contents offer side, the thing about a display, the thing about the difference in the language used, etc. are typical. For example, with a personal computer and a cellular phone, since the screen product and resolution of a display completely differ from each other, the display of the Web page in these both will be a completely different thing.
[0004] Moreover, it is [some which were described by WML (Wireless Markup Language) called WAP (Wireless Application Protocol) or HDML (Handheld Device Markup Language)] and is not uniform, if there are some which were described by CHTML (compactHTML) even if it is the same Web page for cellular phones. For this reason, at the contents offer side, it corresponds by preparing two or more kinds of contents which suited each for that from which operation environments, such as a hardware environment and a software environment, differ.
[0005]
[Problem(s) to be Solved by the Invention] However, in order for a user terminal to display these contents, the full path of URL (address) of a Web page with contents must be specified, and it is very troublesome. Moreover, URL of the Web page corresponding to each operation environment did not have to restrict always being announced officially, but had to look for that page by itself in this case, and has forced the big burden upon the user. Moreover, a user accesses the Web page which is not corresponded to a self user terminal in many cases, and is having forced unpleasant experience, such as a Web page not being displayed or becoming an imperfect display.
[0006] the adaptation contents offer approach that the contents as which the Web page corresponding to a terminal environment is chosen automatically and which it suits even if this invention is made in view of this present condition, and two or more kinds of user terminals from which a terminal environment differs are alike, respectively, it receives and a user does not specify the full path of the URL are displayed, and its system -- it is going to provide -- it is a thing.

[0007]
[Means for Solving the Problem] As a result of inquiring that this technical problem should be solved, when a user terminal connected this invention person to a provider or a contents offer server, the connection other party was provided with the information about a user's terminal environment, or it noted that there was a function to teach terminal environmental information to the inquiry from the other party in early stages of communication link initiation. And when using this function, automatic distinction of the terminal environment was carried out, the idea that a user terminal is connectable with the suiting Web page was obtained, and this invention was completed. This invention completed based on this idea has the next configuration.
[0008] Two or more sorts of user terminals from which, as for the adaptation contents offer system of this invention, an

operation environment differs, With the contents server of plurality [**** / which manages two or more sorts of Web pages from which URL established on the Internet that two or more sorts of each user terminals from which these operation environment differs should be provided with the contents which carry out normal actuation differs / single] It intervenes in the middle of the communication path of said user terminal and contents server. Hold the information about terminal operation conditions required to carry out normal actuation of the contents offered from the Web page established by said each URL, and the operation environmental information is acquired from a user terminal in early stages of the time of communication link connection, or communication link initiation. It is characterized by having the connection guidance server which distributes the connection place of a user terminal to URL by which the Web page which suited the operation environment was established. If the contents (for example, the database itself which is a display parent) from which substantial contents differ may differ, the semantics of "displaying the contents which suited" here is included also when only display gestalten differ using the thing same as a database which is the same contents, for example, a display parent, substantially. While the Web page which can be distributed as a connection place of a user terminal uses a common database in the case of the latter, the function as a window which displays this database by different display format will be achieved.

[0009] The operation environment to fit may be a hardware environment of a user terminal, and may be a software environment. The typical things of a software environment are the language used, the class of browser, etc.

[0010] As operation environmental information acquired from a user terminal, the information which analyzes the User-Agent header which a user terminal transmits, for example, and is acquired, the browser information which a user terminal returns to the inquiry from a server, the provider information further included in the hysteresis information on the connection root are mentioned.

[0011] Although the new terminal which will appear in the future is also applicable as a user terminal, at present, a cellular phone, a personal computer, a Personal Digital Assistant, etc. are applicable.

[0012] Although especially the service that a contents server offers is not limited, if an interested category is specified for example, and member registration is carried out, it can illustrate the mail magazine to which the information updated when information was updated about the category is notified by e-mail. The location between which a connection guidance server is made to intervene does not ask whether it is in the Internet communication network, or it is outside that what is necessary is just to be in the middle of the communication path of a user terminal and a contents server. For example, making direct connection of a user terminal and the connection guidance server through the Internet is also considered. In this case, it will connect with a connection guidance server by calling the predetermined telephone number. Moreover, local connection of the connection guidance server may be made at a user terminal. The connection guidance server in this case is the handling like an adapter, and will be connected to a contents server via the means of a LAN course and also others through a public communication channel through the connection guidance server of this configuration like an adapter. The gestalt connected to a contents server completely through the Internet is also the application range of this invention. Application to the new communication network which replaces this application with the Internet which may appear in the future is expected.

[0013]

[Embodiment of the Invention] Next, it explains based on the example illustrating the detail of this invention. Drawing 1 shows the typical example of this invention, and shows the case where adaptation contents are offered to two or more cellular phones with which a personal computer differs from the connection telephone company. Although the telephone corresponding to i-mode (NTT DoCoMo, Inc. trademark) of NTTDoCoMo (NTT DoCoMo, Inc. trademark) and the telephone corresponding to EZweb (DDI, Inc. trademark) of being cellular (DDI, Inc. trademark) are illustrated as a cellular phone here, it cannot be overemphasized that the candidate for application of this invention is not limited to these.

[0014] In the case of this example, in a personal computer 1, it connects with Web page (page for PC is called hereafter) 1a for personal computers, and it must connect with page 2a for i-mode, and the cellular phone 2 corresponding to i-mode must connect the cellular phone 3 corresponding to EZweb to page 3a for WAP. In order to make such connection automatically, without needing the special actuation by the side of a user terminal, the connection guidance server 5 for distributing the destination which goes to a Web page from a user terminal in the middle of the communication path of said each user terminals 1, 2, and 3 connected to the Internet 4 and the contents server which offers each Web pages 1a, 2a, and 3a is formed. Each Web pages 1a, 2a, and 3a may be offered by the contents server which became independent, respectively, and may be offered by the common contents server. As a result of forming the connection guidance server 5, a user Each Web page 1a, It will go via a connection guidance server as the access root to 2a and 3a. The Web page which suited each user terminal only by all the user terminals 1, 2, and 3 specifying a connection guidance server's URL (for example, 090.co.jp) as the connection place (-- for example, -

~ if it is a page for PC and is 090.co.jp/..../pc and a page for i-mode -- 090.co.jp/.. if it is a page for /i-mode and WAP -- 090.co.jp/.. it can distribute to /WAP). The database which is common contents supply origin is behind each [these] page which was able to be distributed, and the contents of this database are displayed by the display format which suited each user terminal through said each Web page. Although offer of the contents which suited each user terminal is enabled by displaying the contents of the common database through said each Web page here, not using a common database, the database of dedication may be formed for every user terminal.It can respond to various user terminals, without adding a hand to the database which is contents supply origin by preparing the Web page as a window which takes charge of a display according to the class of each user terminal, in using a common database.

[0015] In order to enable the distribution to such each Web page, the database which specified the correspondence relation between the function to analyze the terminal environmental information received from user terminals 1, 2, and 3 at the time of connection with user terminals 1, 2, and 3, and URL of the Web page which suits each terminal environmental condition and it is given to the connection guidance server 5. Although the connection guidance server 5 distributes URL of the connection place of user terminals 1, 2, and 3 based on this database, there is the following in the technique by which the connection guidance server 5 acquires terminal environmental information from user terminals 1, 2, and 3.

[1] The technique of analyzing the User-Agent header information which a client transmits. According to this approach, the information about software environments, such as hardware environments, such as model information on a terminal, and a class of browser, can be acquired.

[2] The technique of asking user terminals 1 and 2 from the connection guidance server 5 side after connection establishment, asking 3 sides a terminal environment, and obtaining the reply. According to this technique, the information about the hardware environment of a terminal or the class of browser can be acquired.

[3] The technique of acquiring the root hysteresis of the server which passed by the time it resulted [from user terminals 1, 2, and 3] in the connection guidance server 5 at the time of communication link connection. According to this technique, since the server which went first can specify, the information about the connection telephone company can be acquired.

[4] The technique of acquiring the domain name to which a user terminal belongs using a domain name server from the self-IP address of the user terminals 1, 2, and 3 obtained at the time of communication link connection. According to this technique, the connection telephone company and a provider can specify by the domain name.

[0016] If needed, it uses independently, or each [these] technique is combined and used. By each [these] technique, since the information about operation environments, such as distinction of whether a user terminal is a personal computer, a cellular phone, or a Personal Digital Assistant, distinction of the connection telephone company of a cellular phone, a model name of a cellular phone, OS of a personal computer and the class of loading browser, and distinction of a provider, can be acquired, the connection place of a user terminal can be distributed based on this information. Distribution is performed by flying the Location header for displaying this Web page to URL of the Web page which suits a user terminal in delivery and the connection place of a user terminal, after the connection guidance server which acquired the operation environmental information of a user terminal specifies the suiting Web page. Hereafter, an example is explained based on a drawing.

[0017] By drawing 1 , it is identified by the connection guidance server that the connection telephone company of the cellular phone 3 which accessed the connection guidance server 5 is each cellular company (DDI), and signs that the connection place has distributed to the page for WAP are shown.

[0018] By drawing 2 , it is identified by the connection guidance server that the connection telephone company of the cellular phone 2 which accessed the connection guidance server 5 is NTT DoCoMo, and signs that the connection place has distributed to the page for i-mode are shown. By drawing 3 , it is detected by the connection guidance server 5 that OS of the user terminal which accessed the connection guidance server 5 is Windows (Microsoft Corp. trademark) or Mac (Apple Computer, Inc. trademark), and signs that the connection place has distributed to the page for PC are shown.

[0019] Drawing 4 and drawing 5 are the examples which can be distributed even if it is any of a personal computer, the cellular phone corresponding to i-mode, and the telephones of EZweb correspondence. In this example, distribution is performed as follows. In addition, in explanation here, a user terminal is made to only call a server the thing of a client, a call, and a connection guidance server.

[0020] A server's address is first requested by URL from a client (090.CO.JP is requested by a diagram). At this time, a User-Agent header is also transmitted in addition to a self-IP address, and a client name and a browser name are acquired from a client in analyzing this. Subsequently, a delivery domain name is reverse-lengthened for the self-IP address of a client to a domain name server. And the domain name obtained as a result of reverse-lengthening is

obtained. Any of reverse length processing of a self-IP address to a domain name and analysis processing of a User-Agent header may be the point. The next processing is performed, after performing such processing and acquiring the information about a domain name or a client.

** In distinguishing and including whether OS name for personal computers, such as Mac and Win, is included in client information, it judges that a client is a personal computer and sends HTML contents. The Location header (for example, http://090.CO.JP/.... /pc) for specifically flying to URL of the Web page of HTML contents is transmitted to a client, this connects a client to the Web page of HTML contents, and HTML contents are sent.

** When Mac or Win is not contained in client information, judge whether next docomo.ne.jp is contained in a domain name, and when contained, a client judges that it is a cellular phone corresponding to i-mode, and sends CHTML contents.

** When docomo.ne.jp is not included in a domain name, a client judges it as the cellular phone corresponding to EZweb, and sends WAP contents.

[0021] It is an example of the approach of distributing which was described here, and, of course, it is also possible to adopt an approach to distribute others. Moreover, although it illustrated distributing NTTDoCoMo and DDI here concretely, the telephone connection firm which distributes is not limited to this.

[0022] Finally, although it is almost equivalent to said example, the example which explained the contents of processing more concretely is explained with reference to drawing 6 . Here, the case where the connection place of a client (user terminal) is distributed to three kinds of contents supply Web pages of the contents for i-mode and the contents for hdml which are the contents for PC and the contents for DoCoMo is described.

** Access a server from clients, such as a personal computer and a cellular phone. A client transmits a User-Agent header. For example, if the contents of the User-Agent header are the cases of a cellular phone, they will turn into contents like "User-Agent:DoCoMo/1.0/p502i." "DoCoMo" expresses the connection telephone company and "p502i" expresses the model of cellular phone here. Moreover, if it is the case of a personal computer, it will become contents, such as "User-Agent:Netscape4.75/Win/...." "Netscape4.75" expresses a browser name and its version, and "Win" expresses OS name here.

** A server receives the connection from a client and receives various headers.

** When "Win" or "Mac" is contained in a User-Agent header, a client judges that it is a personal computer, it transmits a Location header to a client in order to display the contents for PC, and flies it to URL of the contents for PC. The contents of the Location header become http://090.co.jp/pc/etc.

** When "DoCoMo" is contained in a User-Agent header, in order to display the contents for DoCoMo, transmit a Location header to a client, and fly to URL of the contents for DoCoMo (contents for i-mode). The contents of the Location header become http://090.co.jp/i/etc.

** Double-check for no error the connection telephone company classification which detected the domain name by the reverse length from an IP address next, is the aforementioned ** and has already been detected. This is for coping with it, when the connection telephone company cannot be specified by the technique of the aforementioned **. When docomo.ne.jp is contained in the domain name obtained as a result of this reverse length, in order to display the contents for i-mode, a Location header is transmitted, and it flies to URL of the contents for i-mode.

** When it does not correspond to ** of a more than - **, transmit a Location header, in order to display the contents for hdml, and fly to URL of the contents for hdml. Although the example which distributes a user terminal to three kinds of contents supply Web pages is explained here, the number of contents supply Web pages can be increased according to the number of classes of the user terminal which should be identified, and it will be coped with by changing the number of stages and the contents of conditional judgment in that case.

[0023] Thus, according to this invention, the contents which suited the operation environment of the terminal can be offered only by accessing a connection guidance server from a user terminal. The list to various sites is carried to the homepage which a connection guidance server manages, the correspondence page to two or more operation environments is prepared about each of each site, and if it is made to put into each site from this homepage, a user can touch the always optimal contents regardless of a self terminal unit. As independent onerous service, not to mention the ability to carry out enterprise expansion, offer of such service can be combined with the enterprise of e-mail distribution etc., and can also be offered as attached service which gives facilities to a customer. Only by changing the Web page as a window which a user terminal accesses according to this invention, sharing contents supply origin Since adaptation contents can be sent to two or more sorts of user terminals from which an operation environment differs, It can respond following the already built contents supply origin also to the user terminal of the new species with which being able to build now easily the site which can send adaptation contents to the user terminal of varieties, and appearing from now on is expected. As long as a connection guidance server is in the middle of the communication

path of a user terminal and a contents server, he may make it placed between other locations in what was described above, although the connection guidance server is making it intervene on the Internet. For example, connection with a connection guidance server is not made via the Internet, but from a user terminal, the telephone number is called and it may be made to make direct connection. Moreover, a cable is used for a user terminal and it may be made to make at it local connection of the connection guidance server which constituted the connection guidance server as small adapter equipment (a kind of inverter), and constituted as this adapter equipment as another example. Moreover, incorporating the connection guidance server which one-chip-ized as the further application in a user terminal is also considered.
[0024]
[Effect of the Invention] According to the contents offer approach of this invention, and its system, even if it does not specify URL of the Web page according to a terminal environment by the user side each time, the contents which suited the terminal can be offered. therefore, a display format is unsuitable in not displaying contents -- etc. -- touching the unpleasant situation is lost and contents can be enjoyed comfortably. Moreover, by applying this invention, it can show only the person who went via the specific telephone connection firm to a special Web page, and new service of giving a privilege alternatively can also be offered now. And since contents can be supplied sharing contents supply origin where a display gestalt etc. is fitted to a different user terminal, it can respond also to the user terminal which will newly appear from now on only by extending the Web page as a window which accepts access from a different user terminal.
[0025] Also in any when the operation environment to fit considers as a thing [considering as the hardware environment of a terminal like] according to claim 3, a thing [considering as a software environment like] according to claim 4, a thing [considering as the class of language used like] according to claim 5, a thing [considering as the class of browser like] according to claim 6, etc., this invention is applicable.
[0026] Since the rate of fixing to the site concerned increases while the attached enterprise of an e-mail distribution enterprise, then a user's facilities can aim at connection guidance service [according to claim 10] realizable [like / with this invention], it leads also to expansion of an e-mail distribution enterprise.
[0027] When considered as direct connection according to claim 11 according connection with a connection guidance server to the call of the telephone number like, or when [according to claim 12] local connection of the connection guidance server is made at a user terminal using a cable, it becomes unnecessary to specify a connection guidance server's URL on the Internet like.
[0028] According to invention according to claim 13, application to the new communication network which may appear will be expected in the future.

[Translation done.]